

March 6, 2008

Dr. Ann Tveit  
Arkema Inc.  
2000 Market St.  
Philadelphia, PA 19103

Dear Dr. Tveit:

The Office of Pollution Prevention and Toxics is transmitting EPA's comments on the robust summaries and test plan for dimethyl disulfide, posted on the ChemRTK HPV Challenge Program Web site on February 9, 2006. I commend Arkema Inc. for its commitment to the HPV Challenge Program.

EPA reviews test plans and robust summaries to determine whether the reported data and test plans will provide the data necessary to adequately characterize each SIDS endpoint. On its Challenge Web site, EPA has provided guidance for determining the adequacy of data and preparing test plans used to prioritize chemicals for further work.

EPA will post this letter and the enclosed comments on the HPV Challenge Web site within the next few days. As noted in the comments, we ask that Arkema Inc. advise the Agency, within 60 days of this posting on the Web site, of any modifications to its submission. Please send any electronic revisions or comments to the following e-mail addresses: [oppt.ncic@epa.gov](mailto:oppt.ncic@epa.gov) and [chem.rtk@epa.gov](mailto:chem.rtk@epa.gov).

If you have any questions about this response, please contact me at 202-564-8617. Submit questions about the HPV Challenge Program through the "Contact Us" link on the HPV Challenge Program Web site pages or through the TSCA Assistance Information Service (TSCA Hotline) at (202) 554-1404. The TSCA Hotline can also be reached by e-mail at [tsca-hotline@epa.gov](mailto:tsca-hotline@epa.gov).

I thank you for your submission and look forward to your continued participation in the HPV Challenge Program.

Sincerely,

/s/

Mark W. Townsend, Chief  
HPV Chemicals Branch

Enclosure

cc: O. Hernandez  
R. Lee  
J. Willis

## **EPA Comments on Chemical RTK HPV Challenge Submission: Dimethyl Disulfide**

### **Summary of EPA Comments**

The sponsor, Arkema Inc., submitted a test plan and robust summaries to EPA for dimethyl disulfide (DMDS, CAS No. 624-92-0) dated December 31, 2005. EPA posted the submission on the ChemRTK HPV Challenge Web site on February 9, 2006.

EPA has reviewed this submission and has reached the following conclusions:

1. Physical-chemical Properties. Adequate data are available for these endpoints for the purposes of the HPV Challenge Program.
2. Environmental Fate. Adequate data are available for photodegradation, biodegradation, and fugacity for the purposes of the HPV Challenge Program. The submitter proposes stability in water testing.
3. Health Effects. Adequate data are available for these endpoints for the purposes of the HPV Challenge Program. The submitter needs to address deficiencies in the robust summaries.
4. Ecological Effects. The submitted data are adequate for the aquatic invertebrates and algae toxicity endpoints for the purposes of the HPV Challenge Program. EPA agrees with the submitter's test plan for the fish toxicity endpoint. The submitter needs to address deficiencies in the robust summaries.

EPA requests that the submitter advise the Agency within 60 days of any modifications to its submission.

### **EPA Comments on the Dimethyl Disulfide Challenge Submission**

#### **Test Plan**

Physical-chemical Properties (melting point, boiling point, vapor pressure, partition coefficient, and water solubility)

Adequate data are available for these endpoints for the purposes of the HPV Challenge Program.

Environmental Fate (photodegradation, stability in water, biodegradation, fugacity)

Adequate data are available for photodegradation, biodegradation, and fugacity for the purposes of the HPV Challenge Program. The submitter proposes stability-in-water testing. Although hydrolysis per se is not expected, testing will clarify whether that or any other degradative processes are significant.

Health Effects (acute toxicity, repeated-dose toxicity, genetic toxicity, and reproductive/ developmental toxicity)

The submitted data are adequate for these endpoints for the purposes of the HPV Challenge Program.

On page five of the test plan, the conclusion for 2.1.2 does not address the repeated-dose toxicity endpoint, which is the heading for this section. The conclusion for section 2.1.4 refers to the "HPB" program which should presumably read "HPV" program.

Ecological Effects (fish, invertebrates and algae)

The submitted data are adequate for the aquatic invertebrate and algae toxicity endpoints for the purposes of the HPV Challenge Program. The submitter needs to address deficiencies in the robust summaries.

*Fish.* EPA agrees with the submitter's proposed testing according to OECD TG 203. The test needs to be conducted in a closed system with analytical monitoring.

### **Specific Comments on Robust Summaries**

#### **General**

The available data in the robust summaries are well presented. However, there are many typographical errors that need correcting.

#### **Health Effects**

*Reproductive Toxicity.* The submitter needs to prepare a robust summary for this endpoint from the repeated-dose toxicity data.

#### **Ecological Effects (fish, invertebrates and algae)**

*Algae.* If available, the submitter should include the following missing information: method used to determine cell concentrations and the composition of the algal medium.

#### **Physical-chemical Properties.**

*Water Solubility.* It is not clear whether the submitter's data are measured or estimated.

### **Followup Activity**

EPA requests that the submitter advise the Agency within 60 days of any modifications to its submission.